NEW PHANEROGAMS FROM MEXICO, V

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Milla Bryani, sp. nov.

Planta 3–9 dm. alta erecta; foliis linearibus revolutis canaliculatis laevibus 2–4 dm. longis; scapo apice 1–3-floro saepe infra medium aspero; bracteis subulatis 5–8 mm. longis; floribus albis lineis viridibus 5 notatis 16–18 cm. longis 1–5 (saepe ca. 2) cm. longe pedicellatis, tubo gracili basim versus 1.5 mm. crasso summum ad apicem sub anthesi 5–6 mm. crasso, lobis patentibus subaequalibus 14–18 mm. longis 4.5–6.6 mm. latis medium versus vel paulo supra medium latioribus utrinque contractis; staminibus exsertis aequalibus ad faucem affixis; antheris oblongis in sicco ca. 3 mm. longis (sub aqua ad 7 mm. longis) extus vesiculari-rugulosis; filamentis ca. 5 mm. longis evidenter exsertis cuneatis, in sicco ca. 0.8 mm. longe (sub aqua ad 2 mm. longe) supra basim antheris dorsaliter affixis, basi imo ca. 1.6 mm. latis paululo supra basim ca. 1 mm. lata deinde apicem versus gradatim attenuatis; filamentis lamellas 2 (vel 3) in faucem corollae decurrentes gerentibus.

COAHUILA: Western base of Picacho del Fuste, on mountain side, *Johnston 8364;* head of Cañon del Cuervo Chico, rocky slopes and crests, *Johnston 8529* (TYPE, Gray Herb.); Corte Blanco fork of Charretarras Canyon, Sierra Madera, grassy rocky flat forming in oak-thickets, *Johnston 9123;* ridge of Sierra de la Fragua north of Puerto Colorado, rocky soil in openings among brush and pines, *Johnston 8777;* Canyon del Agua, Sierra Madera, *Muller 3203.*

Differing decisively from the widely ranging *Milla biflora* Cav. in its well developed exserted filaments and more slender and elongate flower. The filaments bear two plates of tissue on their inner surface. These plates narrow as they extend upward toward the base of the anther. The summit of the immature ovary bears three lines of minute conic trichomes. These are more prominent than those frequently present on the ovary of *M. biflora.* The pale green lines down the middle of each perianth-segment of *M. biflora* are usually evidently three-nerved. In the proposed species these nerves are very inconspicuous. *Milla biflora* has been collected in various parts of Chihuahua, but the only station in Coahuila known to me is in the Sierra de Hechiceros on the Chihuahua border. The species here proposed ranges well to the east of the known range of *M. biflora* and appears to be endemic to the limestone mountains of north-central Coahuila.

I have associated with this species the name of my companion during much of my field work in Coahuila in 1941, Prof. Kirk Bryan of the Department of Geology and Geography of Harvard University. His stimulating companionship and his geologist's pick, frequently used for botanical purposes, contributed greatly to the pleasure and botanical success of the weeks we travelled together. It is a pleasure to associate his name with one of the plants he helped me collect.

Nolina texana Wats., var. **compacta** (Trel.), comb. nov.

N. erumpens compacta Trel. Proc. Amer. Philos. Soc. **50:** 418. 1911.

N. affinis Trel. l.c. 417.
N. caudata Trel. l.c. 417.

Differing from typical *N. texana,* of the eastern portions of the Edwards Plateau, in its more robust habit and in the more elongate, much larger, and more densely and abundantly branched female inflorescences. The ascending branches of the inflorescence are much more rigid and much more abundantly and stiffly short-branched. Except for Thompson's collection from Marathon (which is typical *N. erumpens*), all of the material of the var. *compacta* originally cited by Trelease belongs to the present plant. Trelease's *N. affinis* is a mixture of the present variety and *N. micrantha.* The actual type-sheet of *N. affinis,* at St. Louis, however, entirely represents the present variety. The var. *compacta* ranges from the western parts of the Edwards Plateau, in Texas, west to southern Arizona and south into northern Chihuahua.

Nolina micrantha, sp. nov.

Planta acaulis 6–10 dm. alta; foliis linearibus numerosis duris 5–13 dm. longis supra basim 2.5–4 mm. latis, supra planis, subtus convexis, margine laevibus vel scabris; panicula 4–6 dm. longa 10–15 cm. diametro; ramis rigidis numerosis laevibus gracilibus ascendentibus vel stricte ascendentibus, superioribus saepe simplicibus ad 15 cm. longis, inferioribus saepe 10–15 cm. longis ramosis (ramulis 2–12 gracilibus ascendentibus 3–7 cm. longis), bracteis 1–3 dm. longis basi scariosis dilatis ad 1 cm. latis alibi filiformibus; floribus ex axillis bractearum secundariarum minutarum scariosarum erosarum 1–2 vel rariter 3 mm. longarum erumpentibus; perianthii lobis 2–2.5 mm. longis oblongis apice rotundis, masculi ochroleucis, feminei costa rosea mediali notatis; capsula purpurascenti 3–4 mm. alta 5–6 mm. lata, pedicello 2.5–4 mm. longo ca. 2 mm. infra perianthum articulato; seminibus globosis ca. 3 mm. diametro capsulas chartaceas inflatas dirumpentibus.

CHIHUAHUA: Vicinity of Santa Eulalia, 1908, *Palmer 139;* rocky hills, Bachimba Canyon south of Chihuahua, *Pringle 2* in pt. (G); Organos, base of grassy hills with large oaks, *Stewart & Johnston 2072;* Sierra Hechiceros, Rancho Encampanada, sunny hillside, *Stewart 193.* COAHUILA: Sierra Hechiceros, vicinity of Rancho El Tule, rocky slopes and flats, *Stewart 490* and *Johnston & Muller 1326* (TYPE, Gray Herb.).

A well marked species, probably most closely related to *N. texana,* from which it differs in its distinctly smaller flowers, looser larger inflorescence with less rigid, less twiggy, more slender and elongate branches, purpurascent capsules, and minute less lacerate bractlets.

Trelease's original publication of *N. affinis* is based upon specimens representing both the present species and *Nolina texana* var. *compacta.* The material at St. Louis, which Trelease designated as the type of his *N. affinis,* is representative of *N. texana* var. *compacta.* It is a composite sheet of *Pringle 1* and *2.* At the Gray Herbarium the sheet of *Pringle 2* is half fruiting material of *N. texana* and half the present plant. The Gray Herbarium sheet of *Pringle 1* is entirely male flowering material of *N. texana.* According to Pringle's field notes his two sheets, nos. *1* and *2,* were collected April 2 and May 22, 1885, in Bachimba Canyon, which is about 35 km. southeast of Chihuahua City.

Dasylirion heteracanthum, sp. nov.

Planta robusta *D. leiophyllo* affinis; foliis 8–11 dm. longis supra basim ampliatam 2–3 cm. latis plus minusve opacis viridibus, margine spinis plerumque divaricatis rectis vel antrorse arcuatis munitis, spinis gracilibus 2–4 mm. longis 5–15 mm. distantibus saepe lutescentibus rariter apicem versus brunnescentibus; fructu obovato-elliptico 6–7 mm. longo 4–5 mm. lato, sinibus apicalibus latis haud profundis.

COAHUILA: Western base of Picacho del Fuste, trunk up to 3 ft. tall, scape 10–15 ft. tall, frequent on rocky slopes and flats, *Johnston 8428* (TYPE, Gray Herb.). TEXAS: Persimon Gap area, Brewster Co., July 30, 1938, *Sperry 1321;* Chisos Mts., July 5, 1931, *Mueller 7958.*

In Texas this plant occupies the area between *D. texanum* Scheele, of the Edwards Plateau, and *D. leiophyllum* Trel., of western trans-Pecos Texas. It has the fruit of *D. texanum* but much longer and broader non-glossy leaves, of which the marginal thorns are distinctly divergent and straight or weakly curved, rather than ascending, stout, and strongly up-curved. The proposed species differs from *D. leiophyllum* in its somewhat broader non-lustrous leaves and in the absence of abundant stout strongly curved retrorse marginal thorns. Its fruit may be similar to those of *D. texanum* and *D. leiophyllum* or narrower with a deep apical notch.

Dasylirion Stewartii, sp. nov.

Planta robusta; foliis metralibus supra basim 2–3 cm. lata viridibus vix lucentibus margine spinis validis brunnescentibus conspicue retrorseque curvatis armatis; fructibus 6–7 mm. longis 4–5 mm. latis obovatis apice profunde et anguste emarginatis, alis 1–2 mm. latis.

COAHUILA: Vicinity of Santa Elena, eastern foothills of the Sierra de las Cruces, 1941, *Stewart 823* (TYPE, Gray Herb.) and *841;* 7 km. north of Santa Elena, *Johnston & Muller 331.*

There is only one described species of *Dasylirion* with retrorse thorns on the leaf-margins, *D. leiophyllum,* of western trans-Pecos Texas and Chihuahua. From that species, *D. Stewartii* differs conspicuously in its larger size, its very much coarser and more strongly armed non-lustrous leaves, its more deeply notched fruit, and its detached more southeasterly range. The plants of the Sierra de las Cruces, where it abounds on the limestone foothills, have a trunk becoming a meter tall and a large head of light green non-lustrous leaves. The flowering stalk becomes several meters tall. There is a vinata at San José, at the southeastern base of the Sierra de las Cruces, where for many years *D. Stewartii* has been used for the preparation of the alcoholic liquor "Sotol."

To a botanist who has not observed and lived with *Dasylirion* in the field, the fact that various species differ in the direction of their leaf-thorns may seem of minor importance. To those living with these plants the differences are very real indeed. In areas having species with antrorsely armed leaves, horsemen and cattle brush these plants with impunity. One may even grasp a handful of their leaves to help one up a steep slope. The collecting of the stem-crown for sotol-making or the gathering of the flowering stems ("garochas") for their many uses (from corks to building material) is a simple task. About the Sierra de las Cruces, however, where *D.*

Stewartii is the only species, all this is very different, for the thousands of cats-claws on the leaves of that species rake savagely the flanks of any animal brushing this plant. Any rider, unprotected by heavy leather chaps, has his legs and thighs unmercifully clawed and perhaps his clothes torn, if he is brushed, while on some narrow trail, against one of the massive clusters of viciously armed leaves. One who collects this plant, either for the herbarium or for the making of sotol, unless he is very cautious and deliberate, bears some scratches after his encounter with the plant. Because of its retrorse leaf-thorns, the plant has won the same respect that is accorded to such cacti as *Opuntia*. Direction of leaf-thorns do make a difference!

With this handsome plant I have associated the name of my good friend, Mr. Robert M. Stewart, of Santa Elena. Through his effort the area about Santa Elena has now become botanically the best explored in all of northern Coahuila. It is a pleasure to associate his name with one of the most common and conspicuous plants in that area.

Dasylirion Stewartii, var. **glaucum,** var. nov.

A forma typica differt foliis pallidis conspicue glaucis.

COAHUILA: 3 m. northwest of El Oro, on road to Esmeralda, 1939, *White 1970*. CHIHUAHUA: Mouth of Cañon del Rayo, Sierra Diablo, 1941, *Stewart 957* (TYPE, Gray Herb.).

The above cited collections have the same fruit as the plant about Santa Elena, but their leaves are very glaucous rather than pale green. Perhaps also the thorns may be less coarse and the leaf-margin between them more denticulate. This glaucous plant is so strikingly different that I believe it merits a name.

Phorodendron flavum, sp. nov.

Planta dioica fulvescens, partibus junioribus omnino velutinis pilis stellatis minutis mollibus fulvis dense obtectis, partibus vetustioribus tarde subglabrescentibus pilis sparsis pallidioribus donatis; caulibus lignosis rigidis saltem ad 3 dm. longis ascendenter ramosis, internodiis 1–3 cm. longis inferioribus 4–7 mm. crassis; foliis oblongo- vel ovato-ellipticis quam internodiis saepe longioribus, majoribus 3.5–3.8 cm. longis 1.3–1.5 cm. latis, 1.5–2.3 mm. longe et 3–4 mm. late petiolatis; lamina crasse coriacea fulve fusco-viridescenti, medium versus vel paulo infra medium latiore, basi rotundata vel angulata in petiolum abrupte contracta, apice rotunda vel non raro plus minusve acuta, subtus (in sicco) plus minusve prominenter costata; spicis femineis (masculis non visis) ad axillas solitariis vel pluribus, ad anthesim 10–14 mm. longis, fructiferis ca. 2 cm. longis, 3- vel raro 5- vel 6-articulatis; floribus in series 2 vel 3 dispositis 8–12 pro articulo; baccis subglobosis ca. 4 mm. diametro glabris laevibus perianthio clauso basi ciliato coronatis.

DURANGO: Vicinity of Durango, on *Quercus*, Nov. 1896, *Palmer 777* (TYPE, Gray Herb.). COAHUILA: Sierra Negras, 9 km. south of Parras, on *Quercus, Stanford, Retherford & Northcraft 210;* hills 11 km. northeast of Jimulco, on *Quercus, Stanford, Retherford & Northcraft 71.*

This species belongs to the *Boreales-Pluriseriales-Flavescentes* of Trelease. The type-collection is cited and illustrated by Trelease, Monogr.

Phor. 42, *tab. 41b* (1916), as an aberrant form of *P. tomentosum* (DC.) Engelm. I do not believe that the species proposed here is very closely related to *P. tomentosum*. That species, based upon material collected near Catorce, S.L.P., "supra Mimoseas," is the common parasite on Leguminosae in the intermontane desert valleys of northern Mexico. It is a grayish green plant with proportionately broader leaves and a thinner grayish indument. The present species is a montane plant, growing on oaks, and apparently reaching southwestern Coahuila from the highlands of Durango. Its very dark green herbage, its more coriaceous, more elongate leaves, and its abundant softer tawny velvety indument set it off conspicuously from *P. tomentosum*. The three specimens cited form a very uniform series.

Gilia Stewartii, sp. nov.

Planta erecta 1–3 dm. alta, ut videtur biennis, stricte ascendenter ramosa minute inconspicueque glandulifera basim versus fruticulosa; foliis numerosis firmulis pinnatipartitis; foliis radicalibus congestis sub anthesi saepe delapsis 2–5 cm. longis saepe bipinnatisectis, lobis distantibus saepe 1 mm. latis raro latioribus; foliis caulinis saepe pinnatifidis sursum reductis, infra medium caulis 3–5 cm. longis, lobis saepe linearibus 3- vel 4-jugatis 5–20 cm. longis ca. 1 mm. latis; floribus numerosis laxe paniculatis; pedicellis 1–3 cm. longis ascendentibus rigidulis glandulis minutis dense obsitis; calyce fere ad basim partito 4–5 mm. longo, lobis cuneatis strictis margine membranaceis partibus mediis viridibus trinervatis saepe glanduliferis; corolla lilacina vel violacea usque ad basim fere partita quam calyce plus duplo longiore, lobis 7–12 mm. longis 2–5 mm. latis elongatis medium versus latioribus, apice acutis vel late acutis, basi subito in unguem angustatis; filamentis exsertis filiformibus quam antheris oblongis valde longioribus; ovario glabro; capsula ellipsoideo-ovoidea apicem lobis calycis attingente vel paulo superante; seminibus numerosis minutis sub aqua mucilaginosis.

TEXAS: 6 mi. north of Hot Springs, Brewster Co., *Innes & Warnock 546;* stony hills near Quitman Canyon, Hudspeth Co., *Chas. Wright.* CHIHUAHUA: Hills near Chihuahua, Aug. 11, 1885, *Pringle 530;* 12 mi. south of Camargo, *White 2196;* 1 km. north of Victoria, *Stewart & Johnston 2004;* Cañon del Rayo, Sierra Diablo, *Stewart 904* and *950.* DURANGO: Cerro de San Ignacio, July 1910, *Purpus 4595.* COAHUILA: 8 km. north of Eutimias, *Stewart 1750;* 15 km. east of La India, Llano de Guaje, *Stewart 1184;* near Tinaja Blanca, Sierra de las Cruces, *Stewart 2235;* Santa Elena, Sierra de las Cruces, *Johnston & Muller 236;* south base of Picacho de San José, *Johnston & Muller 801;* 5 mi. south of San José, *Johnston & Muller 1258* (TYPE, Gray Herb.); Cañon del Gringo, Sierra Planchada, *Stewart 1049;* Cañon de Hidalgo, Sierra Mojada, *Stewart 1096;* Sierra Mojada, *Jones 348;* Tanque Jerico, north margin of Cañada de Cuervo Grande, *Johnston 8345;* Puerto Colorado, *Johnston 8708;* western end of Sierra Fragua, high ridge north of Puerto Colorado, *Johnston 8786;* Soledad, 1880, *Palmer 845;* Saltillo, 1898, *Palmer 312;* Saltillo, 1878, *Parry 8;* 2 mi. west of Saltillo, *White 1660;* 4 mi. north of Peña, *Johnston 7718.* HIDALGO: Ixmiquilpan, 1905, *Purpus 1398.* GUANAJUATO: Jaral, 1887, *Schumann 351.*

A well marked species of the desert limestone mountains, growing on slopes and on outwash near their bases. It appears to favor silty soils. The lilac or pale violet or lavender corolla-lobes are elongate and taper to a point. The shape and color of its corolla-lobes, as well as its deeply cut calyx, which is equalled or over-topped by the capsule, readily distinguish

the new species from *G. rigidula* Benth. Its pinnate leaves, with few distant slender elongate lobes, as well as its glanduliferous calyx, its abundant basal branching, and its lower stature, readily distinguish it from *G. incisa* Benth., probably its closest relative. Material from the eastern half of Coahuila appears to have smaller corollas (7–8 mm. long) than that from other areas. The corollas are usually 9–12 mm. long. The species is named in honor of Mr. Robert Stewart, who has made numerous collections of this charming little plant.

Gilia platyloba, sp. nov.

Planta erecta 2–3 dm. alta, ut videtur biennis, stricte ascendenter ramosa minute inconspicueque glandulifera ceterum glabra basim versus fruticulosa; foliis firmulis; foliis radicalibus congestis sub anthesi saepe delapsis; foliis caulinis pinnatis vel bipinnatis, infra medium caulis 2–6 cm. longis 1–2.5 cm. latis, lobis 2–4-jugatis linearibus vel anguste cuneatis integris vel sparse breviterque incisis; floribus numerosis laxe paniculatis, pedicellis 1–3 cm. longis rigidulis dense glanduliferis; calyce fere ad basim partito 5–6 mm. longo, lobis strictis cuneatis margine membranaceis partibus medialibus viridibus trinervatis et glanduliferis; corolla caerulea usque ad basim partita quam calyce plus quam duplo longiore, lobis obovatis 13–17 mm. longis 7–9 mm. latis supra medium latioribus apice rotundis vel obtusis basi in unguem angustatis; filamentis exsertis filiformibus quam antheris luteis oblongis valde longioribus; capsula late ellipsoideo-ovoidea apice lobos calycis attingentibus vel paulo superantibus; seminibus minutis numerosis sub aqua mucilaginosis.

COAHUILA: Saltillo, 1898, *Palmer 799* (TYPE, Gray Herb.); Fraile, *Stanford, Retherford & Northcraft 38;* 11 km. northeast of Jimulco, *Stanford, Retherford & Northcraft 38.* NUEVO LEON: Canyon Capulines above San Enrique, *Mueller 2377.* ZACARECAS: Concepcion del Oro, 1904, *Palmer 282;* 18 km. west of Concepcion del Oro, *Stanford, Retherford & Northcraft 602;* Cedros, *Lloyd 85.* DURANGO: Durango, 1896, *Palmer 353.*

Related to *Gilia Stewartii,* from which it differs chiefly in the shape of the corolla-lobes and their larger size and dark blue color. From *G. rigidula* Benth., with which it has been confused, the new species is readily distinguished by its cleft, inconspicuously glanduliferous calyx, and its more elongate capsule which equals or surpasses the calyx in length. From *G. incisum* Benth., another relative, it differs in its pinnate leaves and very large corollas.

Gilia aggregata Spreng., var. **texana** (Greene), comb. nov.

Callisteris texana Greene, Leaflets **1:** 160. 1905.

This is the variant of *G. aggregata* found in rocky arroyos in the oak-belt of the Sierra Madre of Tamaulipas and Nuevo Leon, in the desert ranges of Coahuila, and north into trans-Pecos Texas.

Gilia calothyrsa, sp. nov.

Herba biennis 3–5 dm. alta basim versus ramosa; ramis pluribus erectis strictis pilis minutis crispis albis mollibus vestitis; foliis pinnatifidis; foliis caulinis inferioribus 2–3 cm. longis 1.5–2 cm. latis, rhachi lineari utrinque segmenta 3 vel 4 anguste linearia 0.5–0.7 mm. lata gerente; foliis superioribus gradatim reductis supremis simplicibus linearibus; floribus in glomerulis 3–10-floris sessilibus vel ad 6 mm. longe pedunculatis gestis, in

thyrsum elongatum 10–18 cm. longum subsecundum dispositis; calyce sparse inconspicueque glandulifero 5–7 mm. longo, lobis 2–3 mm. longis subulatis spinescentibus herbaceis quam tubo membranaceo brevioribus; corolla violaceo-purpurea saepe 1.5 (raro ad 2) cm. longa salviformi, tubo 2–3 mm. crasso plus minusve curvato, limbo 10–13 mm. diametro, lobis patentibus ovatis 3–5 mm. latis quam tubo duplo longioribus apice rotundis apiculatis; staminibus 5 ad tubum corollae valde inaequaliter affixis haud vel vix exsertis; stylo vix exserto basim versus pilis brevibus sparsis ornato; capsula et seminibus ignotis.

COAHUILA: Sierra de las Cruces, rocky slope about the summit of the highest peaks, flower light purple, *Stewart 1044* (TYPE, Gray Herb.). CHIHUAHUA: Just east of Organos, local on rocky flat, flowers violet, *Stewart & Johnston 2054;* Sierra de los Organos, *LeSueur 1391.*

A species related to *G. Macombii* Torr., *G. Thurberi* Torr., and *G. Pringlei* Gray, and occurring in an area to the east of that occupied by these species. It is probably closest to *G. Pringlei,* from which it differs in its coarser more branched stems, smaller leaves, and short salverform (rather than trumpet-shaped) corollas with flat rounded apiculate (rather than curved lance-ovate attenuate) lobes. It is a beautiful and attractive plant and merits cultivation.

Nama Marshii (Standley), comb. nov.

Nama biflorum var. *Marshii* Standley, Field. Mus. Pub. Bot. **22:** 167. 1940.

This species is most closely related to *N. propinquum* Mort. & Hitchc., having similar long-petiolate leaves and more or less cordate blades. The leaves, however, are thinner, green, and somewhat shaggy villous or glabrescent. The pedicels are more elongate and the stems are more slender and flaccid.

Nama serpylloides Gray, var. **confertum,** var. nov.

A varietate typica differt floribus confertis; pedicellis crassioribus 1–2 mm. longis maturitate vix elongatis; foliis cum pilis gracilioribus longioribus abundantibus velutinis; caulibus rigidioribus.

COAHUILA: 2 miles west of Cuatro Cienegas, spreading over a low bank of alkaline gypseous soil, leaves fleshy, 1938, *Johnston 7126* (TYPE, Gray Herb.); a mile west of El Anteojo (west of Cuatro Cienegas), confined to markedly saline gypseous soil, usually on low banks along contact of gypsum and saline clays, leaves grayish, succulent, corolla pale pink, 1941, *Johnston 8868;* Cuatro Cienegas, 1939, *Marsh 2016.*

A form evidently related to *N. serpylloides* var. *velutinum* Hitchc. (to which it was referred by the author of that variety), but differing in its coarser more loosely branched and more rigid branches, its denser yellowish (rather than grayish) velutinous indument, and especially in its permanently short-pedicellate congested flowers. In typical *N. serpylloides* and in the var. *velutinum,* the pedicels are slender, eventually spreading, and become 1–2 cm. long. The leaf-blade of the var. *confertum* is more succulent than in the var. *velutinum,* and perhaps even more revolute and becoming more pronouncedly boat-shaped.

Phacelia infundibuliformis Torr., var. **phanerandra,** var. nov.

A varietate typica differt filamentis lobos corollae evidenter sed breviter superantibus antheras aurantiacas conspicuas proferentibus.

COAHUILA: Sierra de las Cruces near Tinaja Blanca, frequent on arroyo-banks, March 12, 1942, *Stewart 2241* (TYPE, Gray Herb.). TEXAS: 14 mi. east of Castolon, Brewster Co., frequent along creek, *Cutler 749*.

This variety occurs far to the east of the known stations for typical *G. infundibuliformis* and appears to be a geographic race distinguished by its protruding stamens. In other characters it agrees closely with the typical form of the species.

Phacelia robusta (Macbride), comb. nov.

Phacelia integrifolia var. *robusta* Macbr. Contr. Gray Herb. **49**: 25. 1917.

A coarse glandular herb on rocky places, along arroyos, and about cliffs. It has been associated with *P. integrifolia* Torr., from which it differs in being non-gypsophilous and in having larger salverform (rather than subtubular) corollas and larger non-corrugated seeds. From trans-Pecos Texas (Chisos and Chinati mountains) it extends far south in Coahuila and Chihuahua. Under the name "*P. integrifolia* var. *arenicola*," Brand, Pflanzenfam. **59** (IV. 251): 81, *f. 17* (1913), has given a mediocre illustration of *P. robusta*, probably based on material collected near Chihuahua City by Pringle or by Palmer.

Phacelia pallida, sp. nov.

Herba e radice crassa lignosa oriens 1.5–3 dm. alta grisea pallida sparsissime glandulifera; caulibus numerosis erectis vel decumbentibus saepe simplicibus pilis minutis abundantibus retrorsis et setis gracilibus longioribus numerosis vestitis; foliis numerosis pallidis carnosulis; lamina oblonga 3–9 cm. longa 17–40 mm. lata, irregulariter crasseque sinuato-crenata saepe irregulariter lobulata hispidulo-villulosa, inferioribus 3–4 cm. longe petiolatis, superioribus duplo minoribus ca. 1 cm. longe petiolatis; cymis terminalibus pluribus densifloribus; calyce ca. 4 mm. longo, lobis oblongis ciliatis dorso glanduliferis cum setis vestitis ca. 1 mm. longe pedicellatis, fructiferis ad 6 mm. longis, lobis spathulatis capsulam evidenter superantibus; capsula ovoidea ca. 4 mm. longa hispidula; seminibus 4 nigris ca. 3 mm. longis corrugatis; corolla ca. 6 mm. longa, tubo basi 1.5 mm. apice 3–4 mm. crasso, 4 mm. longo, lobis ad 2 mm. longis ascendentibus; staminibus longe exsertis.

COAHUILA: Gypsum beds on the escarpment of Cañada Oscuro near Tanque La Luz, fleshy grayish non-glandular herb confined to gypsum, corolla lavender-white, *Johnston 8486* (TYPE, Gray Herb.).

A relative of *P. integrifolia* Torr., characterized by its practically glandless herbage, branching habit, large gray pallid frequently lobed petiolate leaves, and few terminal cymes. Many of the lower leaves have a pair of small lobes borne on the petiole just below, and separated from, the blade proper.

Phacelia petiolata, sp. nov.

Herba glandulifera 1–3 dm. alta e radice lignosa annua erumpens; caulibus pluribus erectis vel decumbentibus sparse ramosis foliosis pilis minutis vix rigidis abundantibus glanduliferis et pilis longioribus divergentibus sparsioribus vestitis; foliis numerosis evidenter petiolatis; lamina glandulis minutis sessilibus utrinque obsita pilis erectis vel ascendentibus gracilibus vestita, in ambitu late ovata vel elliptica, medium versus latiore, basi late

acuta, obtusa vel reniformi, margine irregulariter crenata et non raro paulo lobulata; circinnis saepe terminalibus solitaribus vel geminatis densifloris; calyce pilis brevibus rigidulis ascendentibus vestito glandulifero, ad anthesin ca. 3 mm. longo ca. 0.8 mm. longe pedicellato, fructiferi ca. 5 mm. longo quam capsula conspicue longiore, lobis spathulatis ad apicem 1.3–1.7 mm. latis; corolla 6–8 mm. longa, tubo 4–5 mm. longo cylindrico apice 3.5–4 mm. diametro basi 1.5 mm. crasso, lobis 2 mm. diametro ascendentibus; staminibus longe exsertis; seminibus nigris 2–3 mm. longis margine carinaque corrugatis; capsula ovata ca. 3 mm. longa hispidula.

COAHUILA: San Lorenzo de la Laguna, 1880, *Palmer 851;* 12 mi. south of Ojinaga, abundant on bank of saline clays, corolla pale lilac, *Johnston 8040* (TYPE, Gray Herb.); 11.5 mi. south of Ojinaga, a few plants about a limestone ledge in deep arroyo, *Johnston 8036*.

A relative of *Phacelia integrifolia,* readily recognized by its broadly elliptic distinctly petiolate leaves, much branched low growth-habit, thickened woody root, sparse cymes, and black corrugated seeds. The lilac corolla has a moderately ampliated tube and throat.

Phacelia teucriifolia, sp. nov.

Annua herbacea erecta; caulibus solitariis vel pluribus saepe simplicibus 10–25 cm. longis rectis rigidulis pallidulis, cum pilis minutis gracilibus adpressis inconspicuis sparse vestitis; foliis basalibus ignotis; foliis caulinis 4–7-pinnatifidis vel pinnato-lobatis adpresse minuteque villosulo-hispidulis, inferioribus petiolatis 4–6 cm. longis in ambitu oblanceolatis, mediis et superioribus sessilibus gradatim reductis in ambitu oblongis vel ovatis, summum ad 4 cm. longis, lobos 3–5-jugos ovatos vel saepe lanceolatos gerentibus; cymis racemiformibus maturitate laxifloris; pedicellis 8–12 mm. longis ascendentibus rectis vel curvatis; calyce sub anthesi 5–6 mm. longo ca. 1.5 mm. lato, lobis oblongo-lanceolatis adpresse-hispidulis margine ciliolatis, fructiferis herbaceis accrescentibus 7–12(–15) mm. longis erectis vel ascendentibus quam capsula subduplo vel plus duplo longioribus; corolla rotato-campanulata 7–10 mm. longa 12–14 mm. diametro, lobis latis rotundis integris ascendentibus; staminibus sparse ciliatis 6–9 mm. longis; ovario dense piloso; stylo usque ad medium partito ciliolato; capsula subglobosa 4–6 mm. longa sparse adpresse hispidula; seminibus 10–20 irregulariter prismaticis 1.5–2.5 mm. longis nigris papillatis irregulariter foveolatis.

COAHUILA: Muzquiz, 1935, *Marsh 138a;* Muzquiz, April 12, 1936, *Marsh 2120* (TYPE, Gray Herb.) and *2135*. TEXAS: 4.7 mi. west of Menard, 1929, *Cory 640;* Tarrant County, 1923, *Ruth 459*.

Related to *P. strictiflora* Gray, and ranging to the west and south of that species. It differs from its relative in its erect or strictly ascending stems, less conspicuous less dense paler non-viscidulous indument of more appressed paler hairs, and its loosely ascending rather than strict fruiting pedicels. The plant dries a light green. The color, texture, and shape of its stem-leaves are suggestive of those found in forms of *Teucrium cubense* L.

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